

FIG. 1

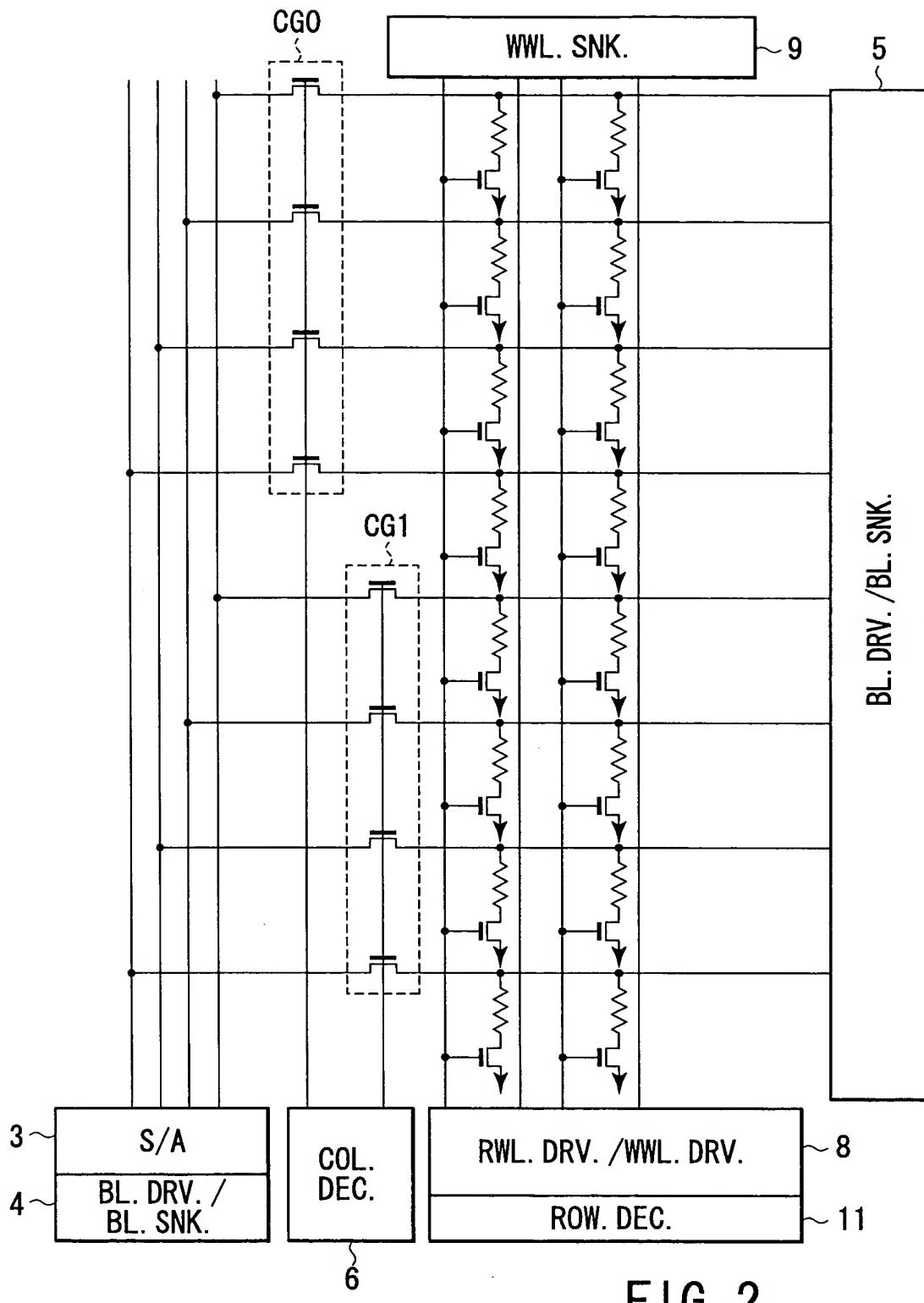


FIG. 2

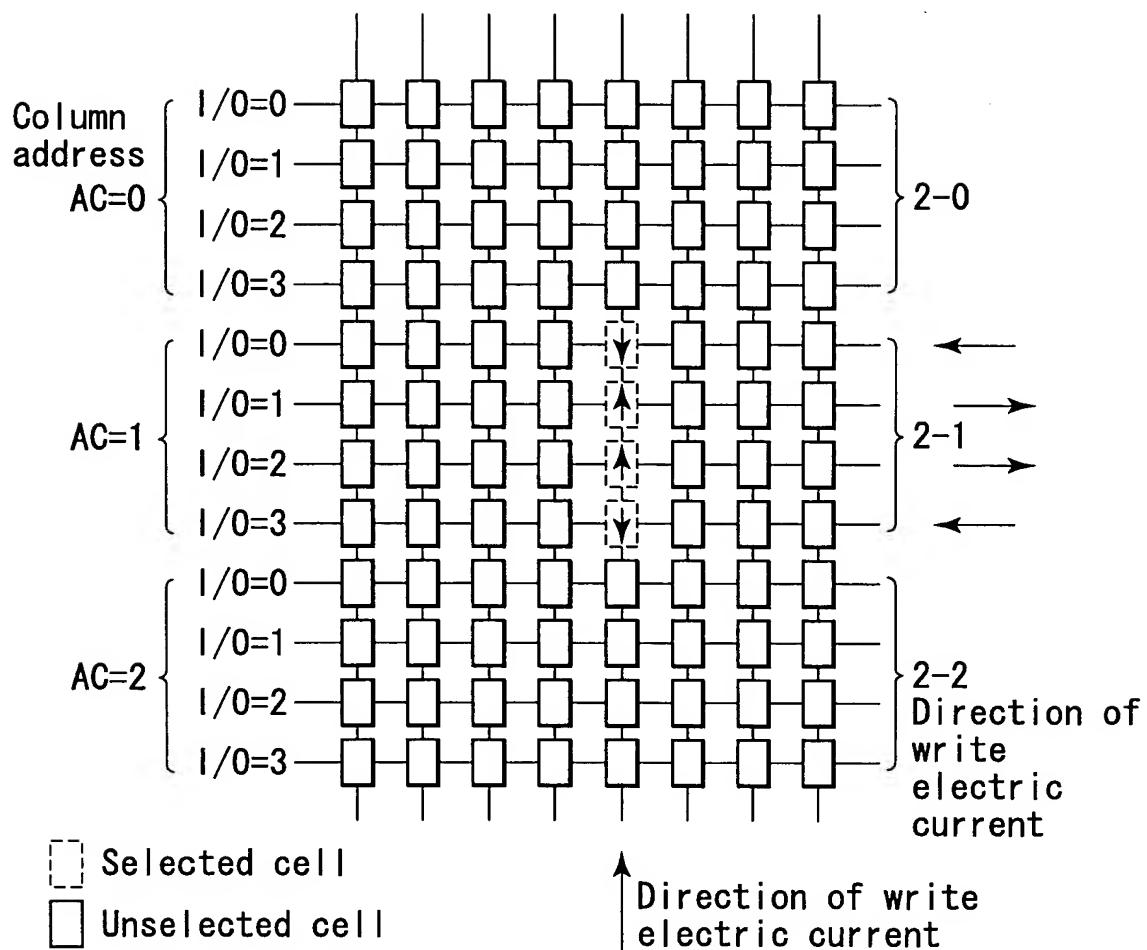
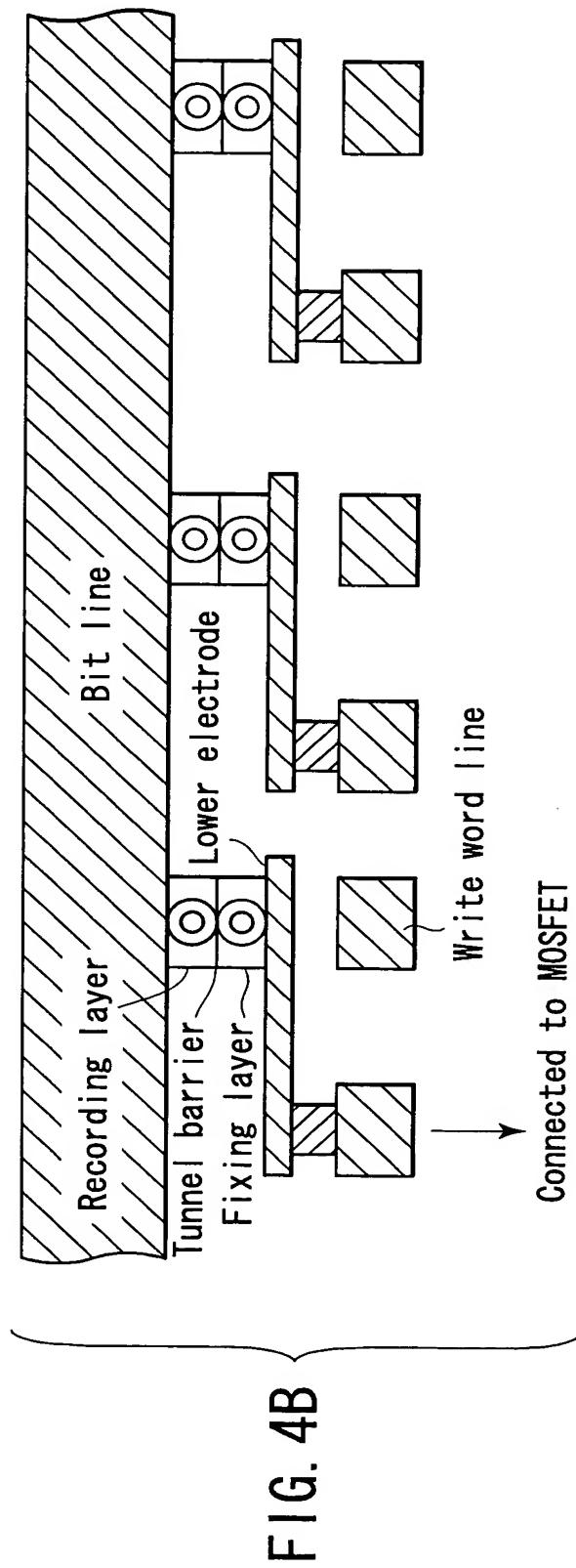
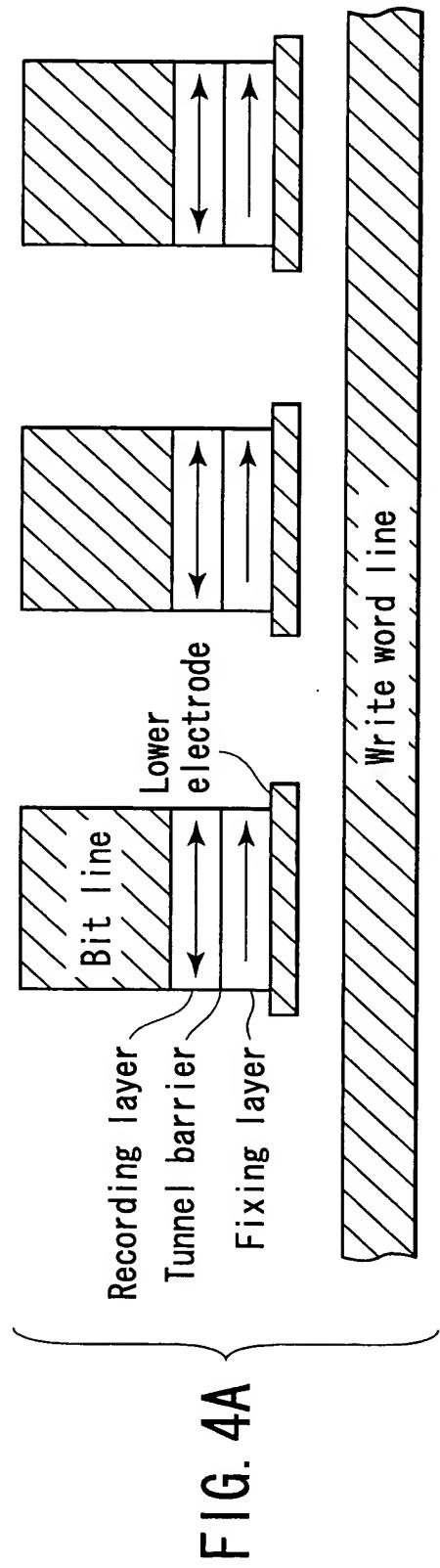


FIG. 3



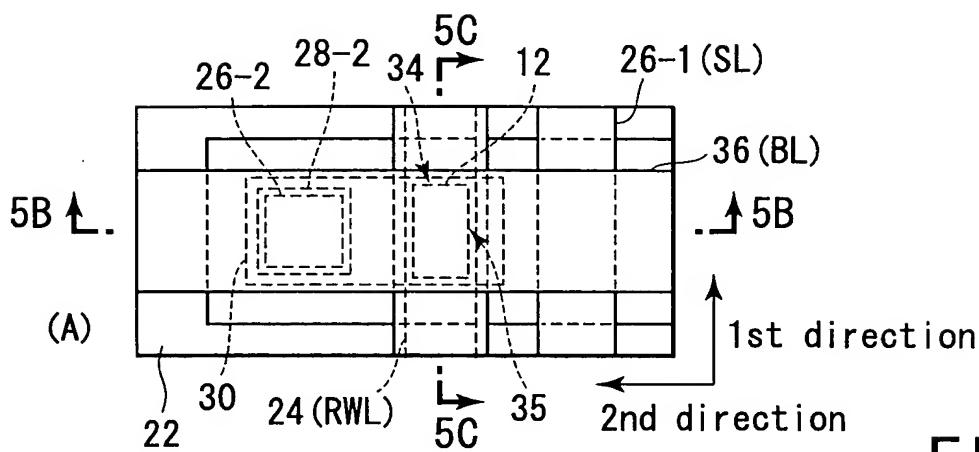


FIG. 5A

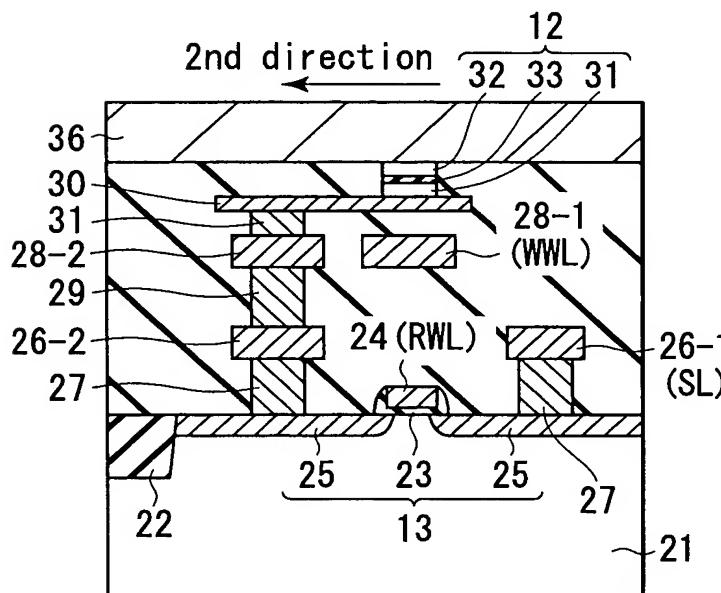


FIG. 5B

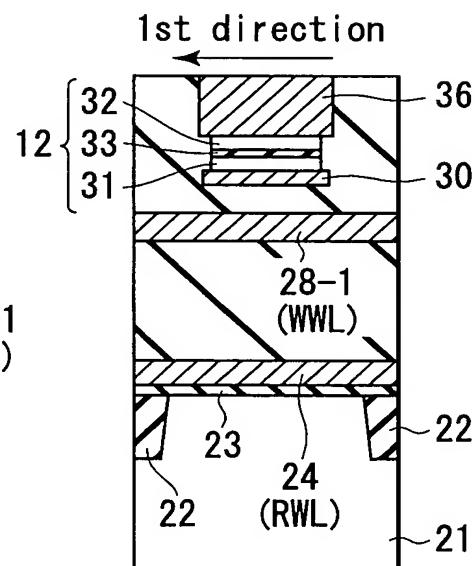


FIG. 5C

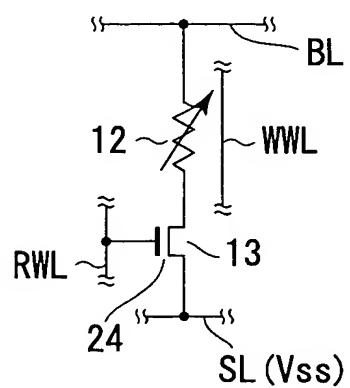


FIG. 5D

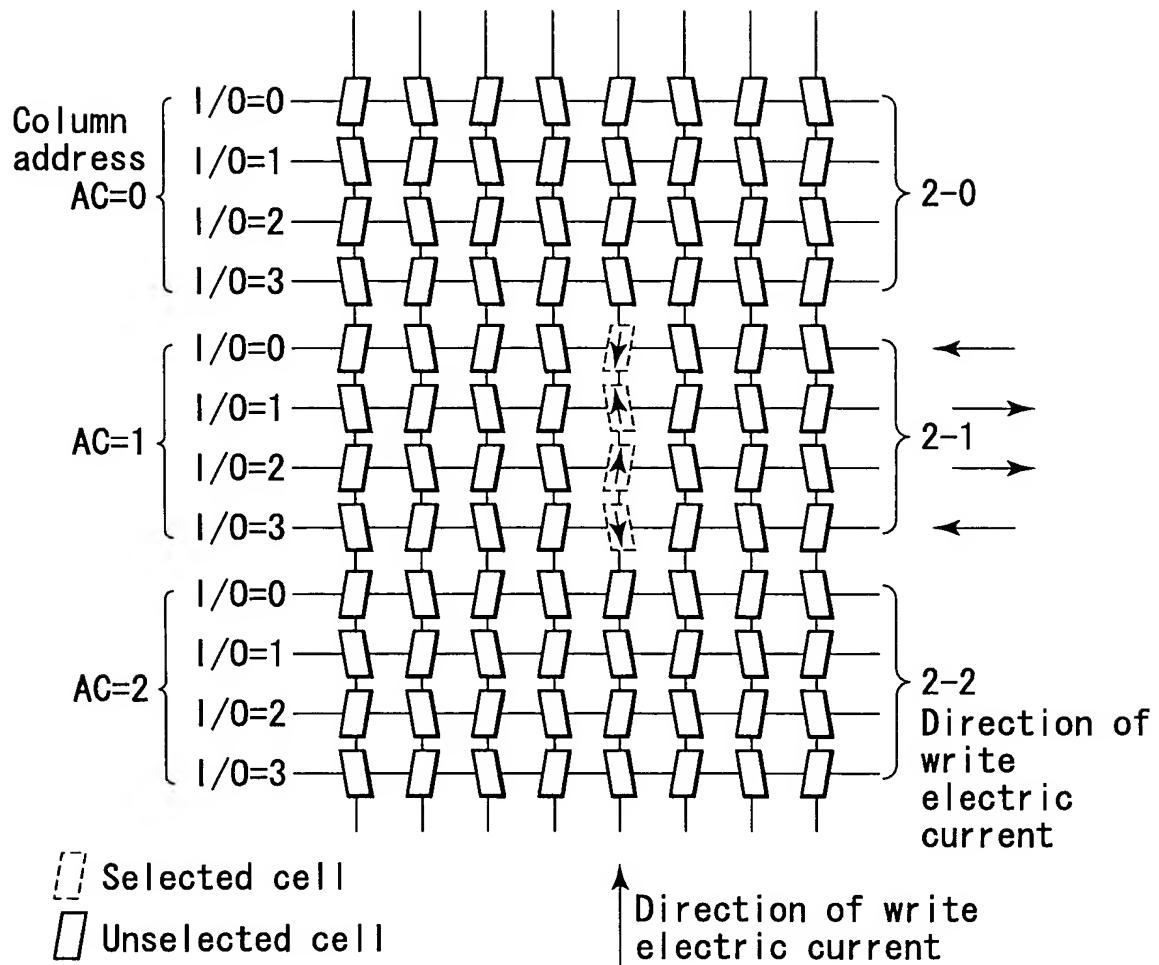


FIG. 6

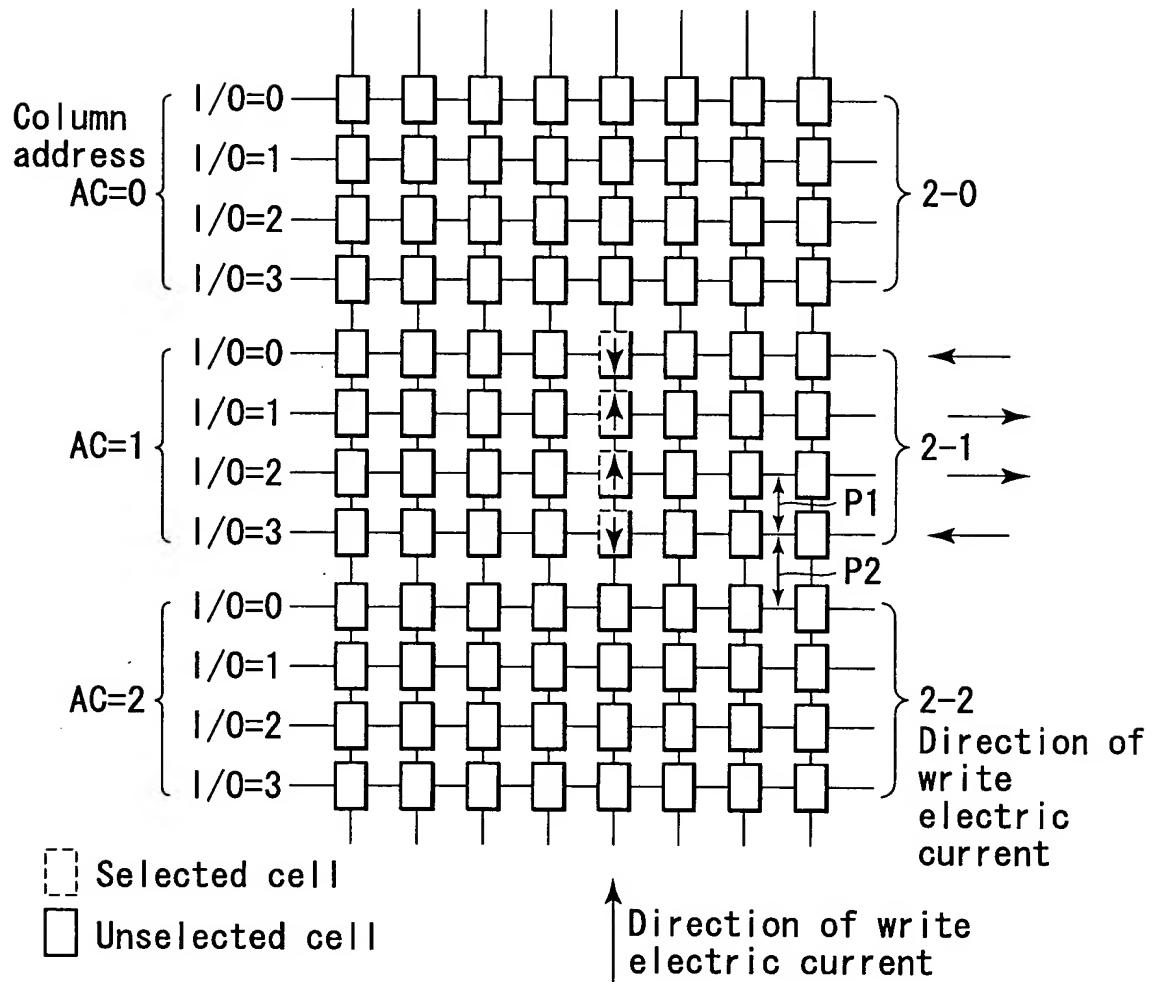
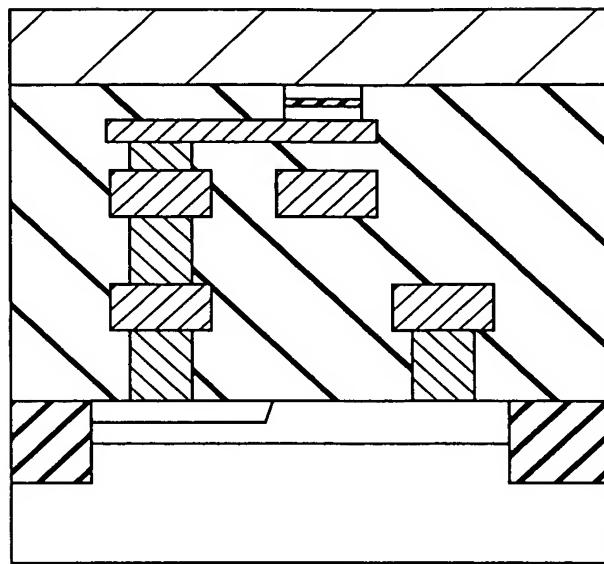
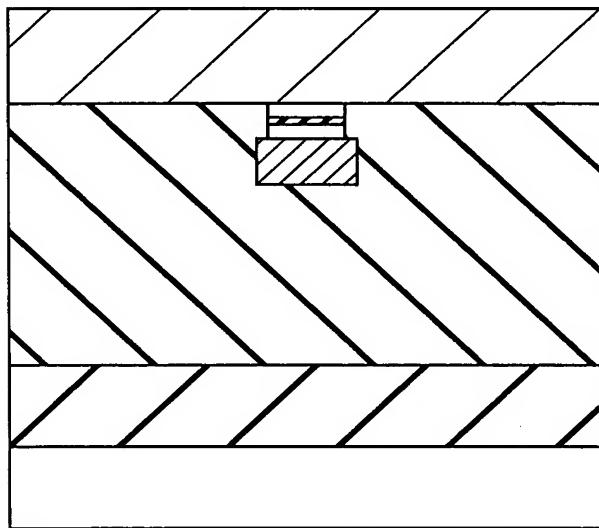


FIG. 7



Cell using diode as switching element

FIG. 8



Cross point cell having no switching element

FIG. 9

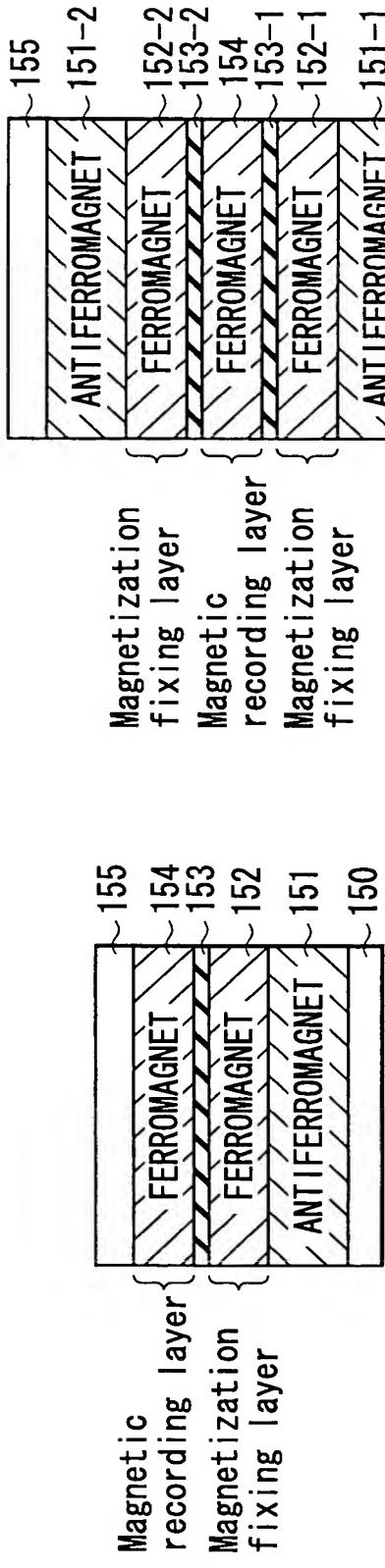


FIG. 10A

FIG. 10B

FIG. 10C

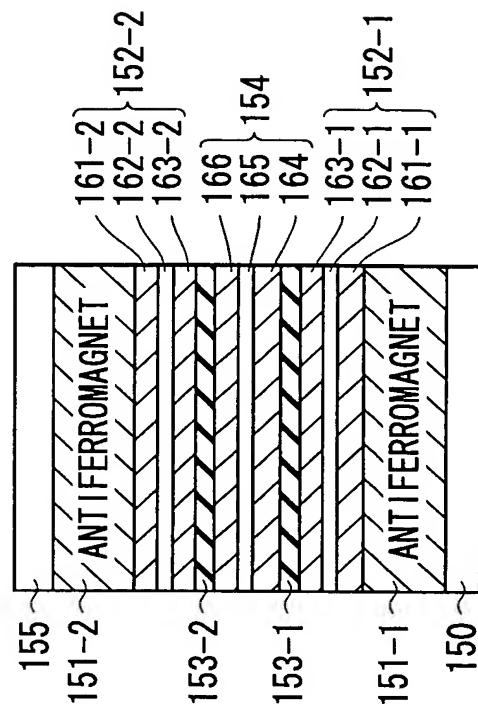


FIG. 10D

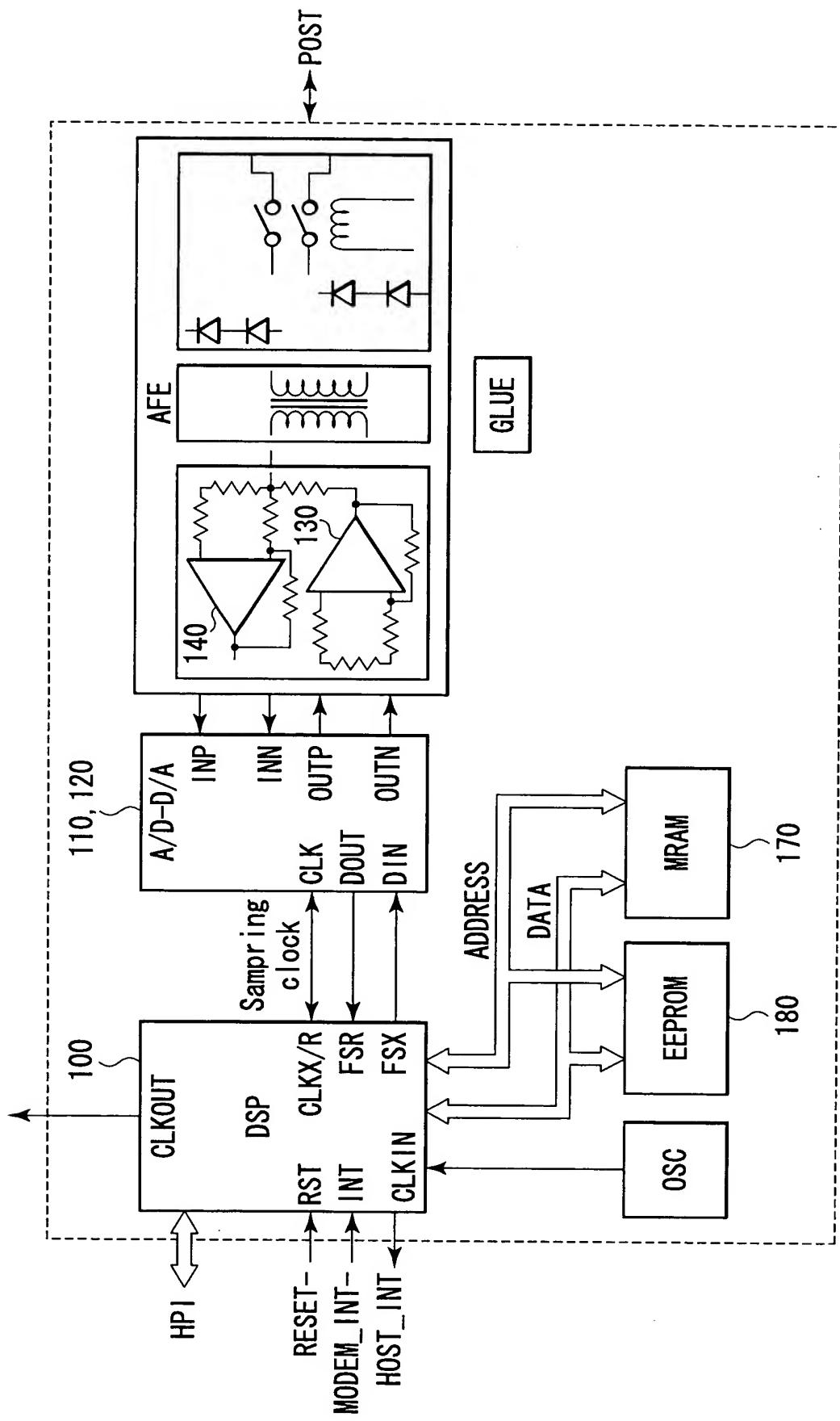


FIG. 11

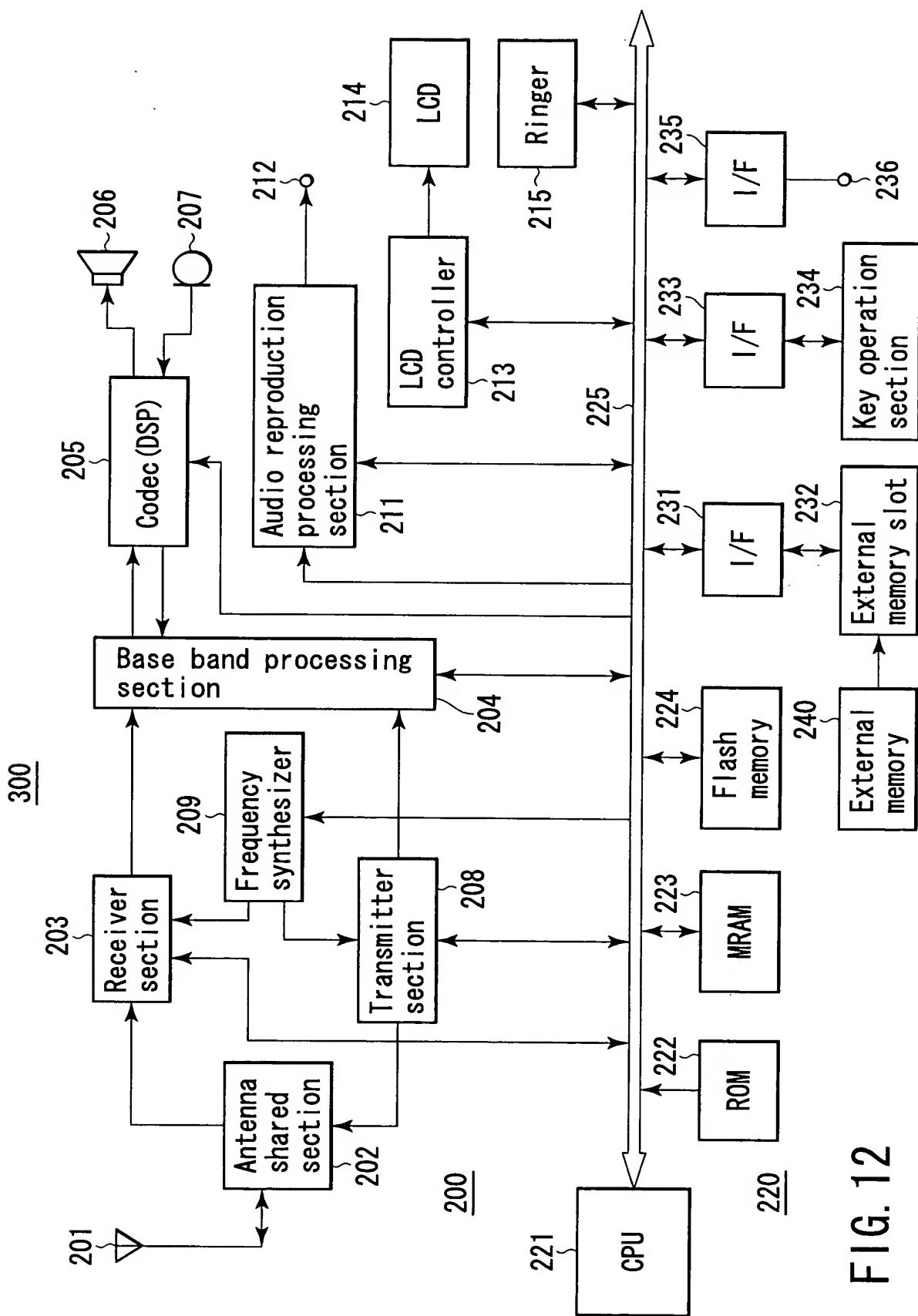


FIG. 12

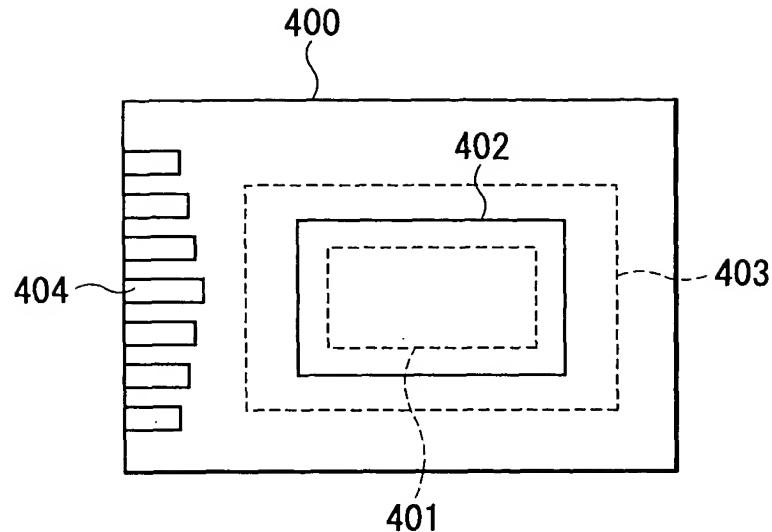


FIG. 13

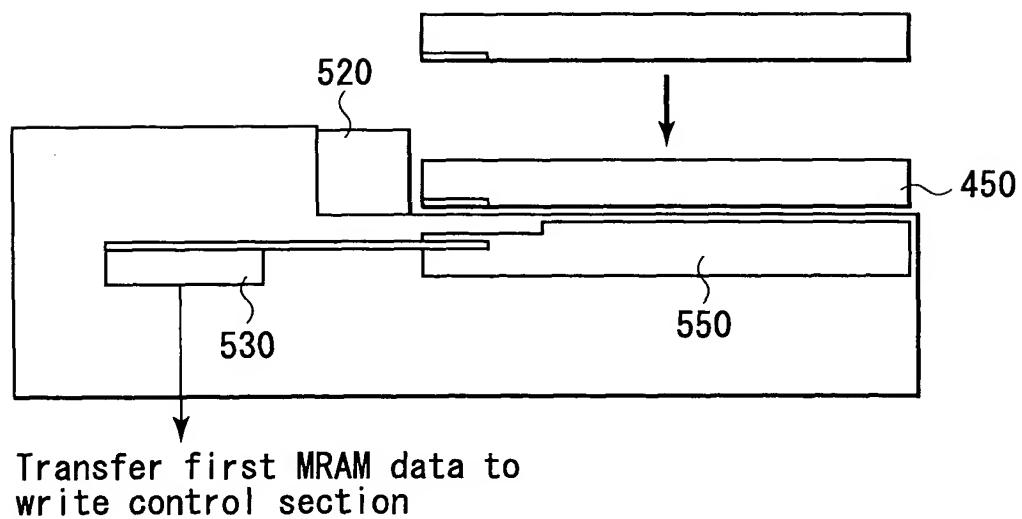


FIG. 16

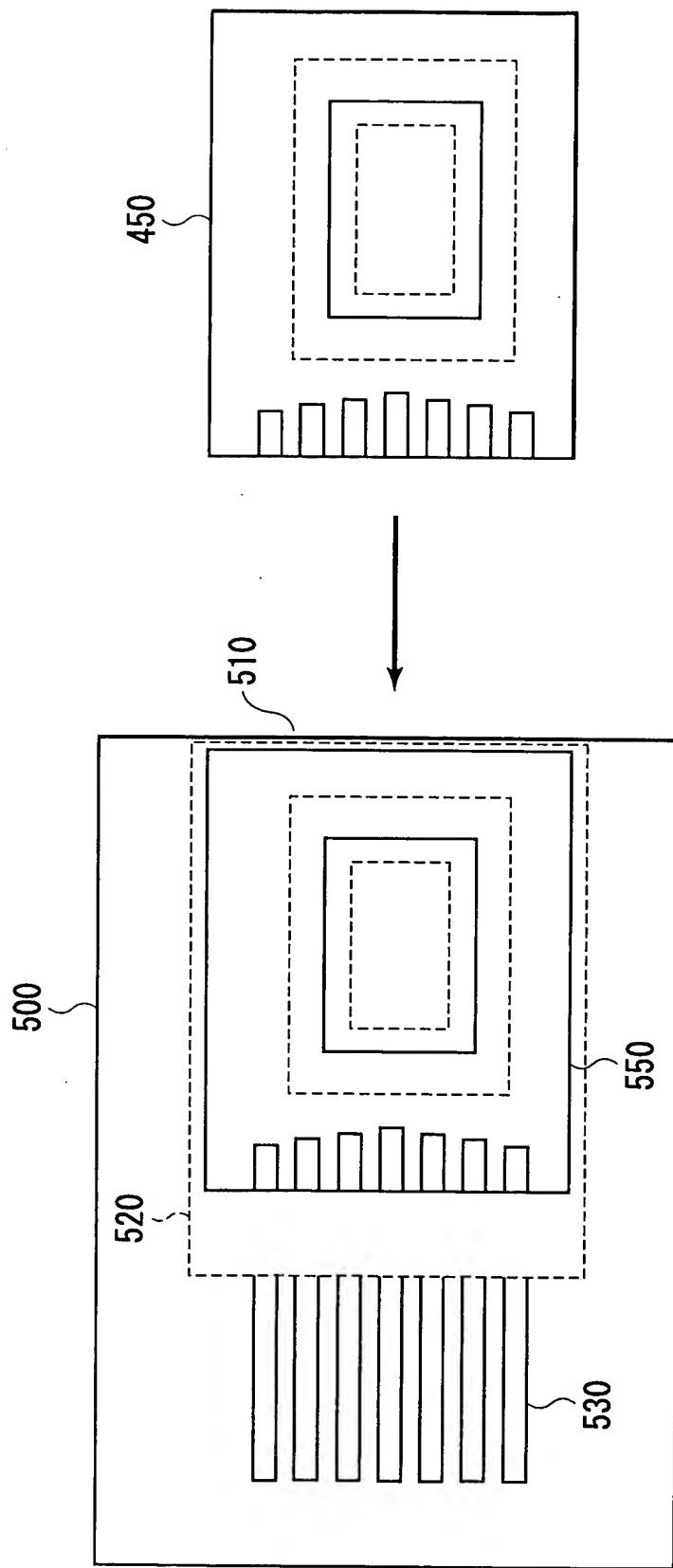


FIG. 14

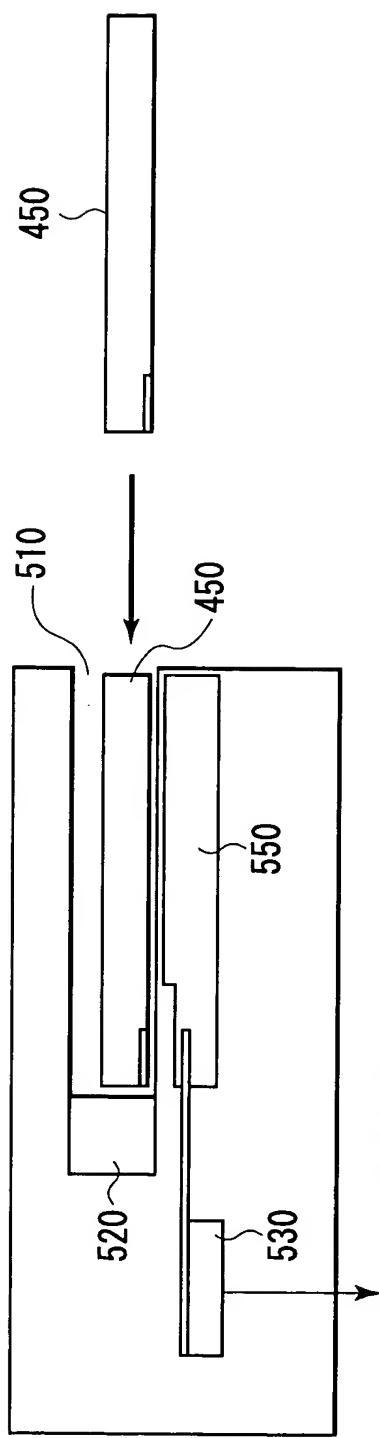


FIG. 15

Transfer first MRAM data to
write control section

Transfer first MRAM data to
write control section

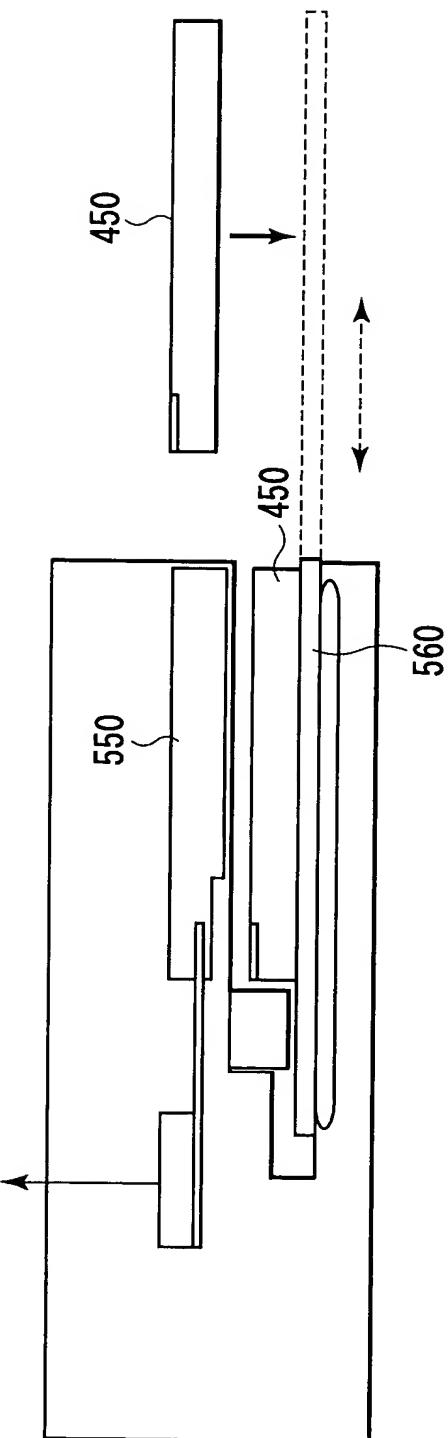
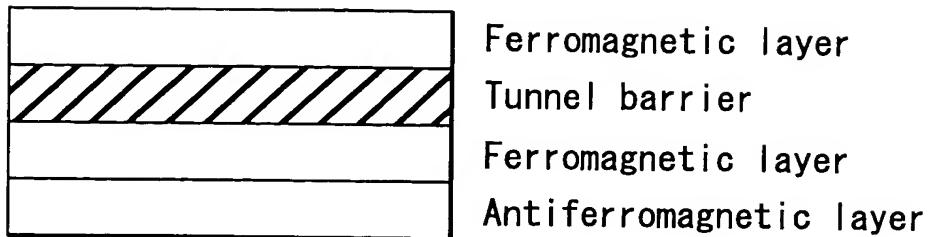
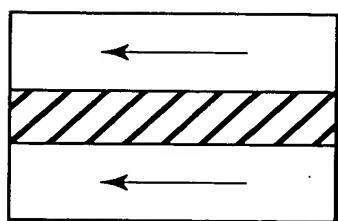


FIG. 17

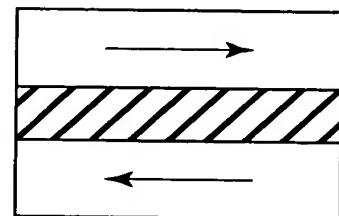


TMR (tunnel magneto-resistive) element

FIG. 18



Parallel
(small resistance)



Opposite parallel
(large resistance)

TMR Effect

FIG. 19A

FIG. 19B

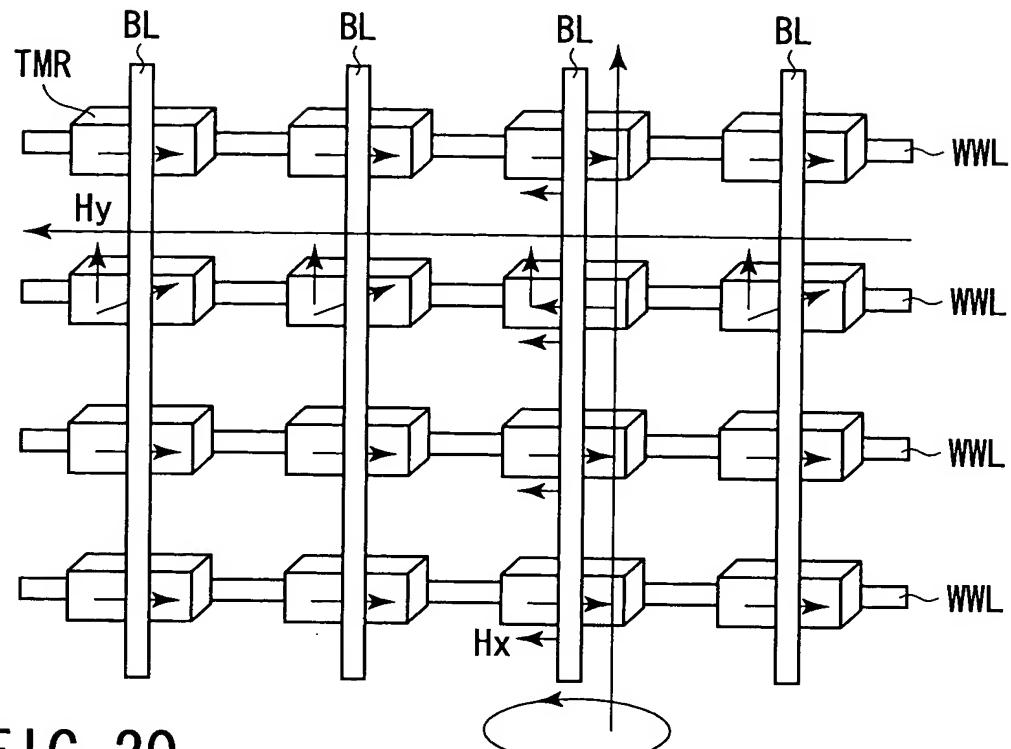


FIG. 20

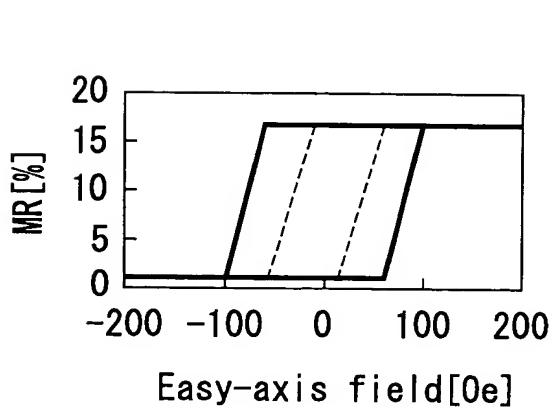


FIG. 21A

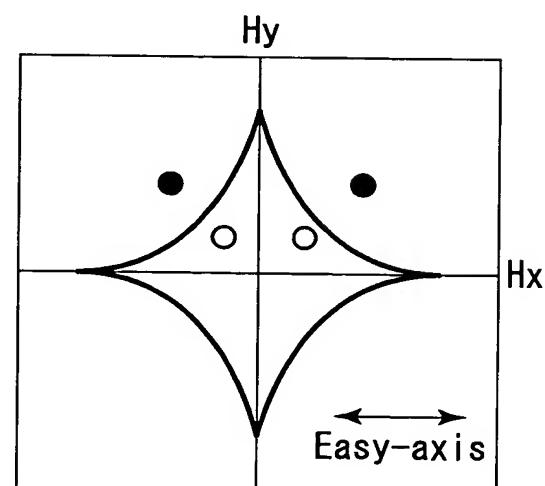


FIG. 21B